

stabilizer, said ammonium nitrate, said surfactant, and said phase stabilizer being soluble in said inert liquid;

atomizing the solution to form a stream of droplets;

freeze-drying the droplets to form agglomerates of crystals of phase stabilized ammonium nitrate, the crystals of phase stabilized ammonium nitrate in the agglomerates being coated with a film comprising the surfactant; and

disintegrating the agglomerates into separated free-flowing phase stabilized ammonium nitrate crystals coated with a film comprising a surfactant.

Please cancel claims 10 and 14.

Please add new claims 15-20 as follows:

15. A process for preparing a free-flowing, phase-stabilized ammonium nitrate, said process comprising the following steps:

preparing a solution of ammonium nitrate, a surfactant, an inert liquid, and an ammonium nitrate phase stabilizer, said ammonium nitrate, said surfactant, and said phase stabilizer being soluble in said inert liquid;

atomizing the solution to form a stream of droplets;

freezing said stream of droplets by contacting said stream of droplets with a surface of a drum, said surface being maintained at temperature below the freezing point of said solution;

sublimating the frozen droplets to remove the inert liquid from the frozen droplets and form agglomerates of the phase stabilized ammonium nitrate; and

disintegrating the agglomerates into separated free-flowing phase stabilized ammonium nitrate crystals coated with a film comprising the surfactant.

16. The process of claim 15 wherein the inert liquid is water.

17. The process of claim 15 wherein the surfactant is a polyvinyl pyrrolidone.

18. The process of claim 15 wherein the phase stabilized ammonium nitrate crystals have an average diameter of about 1 μ m to about 20 μ m.

19. The process of claim 15 wherein the amount of surfactant in the solution is from about 0.01% to about 0.15% based upon the combined weight of the ammonium nitrate and the surfactant.

20. The process of claim 15 wherein the phase stabilizer comprises potassium nitrate.